

By the absence of granulation on the upper surface of the last whorl, this specimen differs from those previously described.

The jaw, mounted by Mr. Wurtz, has strong, narrow ribs. Central and lateral teeth have mesocones only.

TWO NEW SPECIES OF *SAYELLA* WITH NOTES ON THE GENUS

BY J. P. E. MORRISON¹

The shells called *Sayella* have proved on examination of living material recently collected from the Chesapeake Bay Area to belong to the Pyramidellidae. Their previous incorrect placement in the Ellobiidae^{2,3} was occasioned by lack of knowledge of the animal characters. The New England species were included in *Pyramidella* (*Syrnola*) by Dr. Bartsch in 1909,⁴ but the less-known southern forms were not until recently suspected as being closely related.

Sayella includes species that range from Mass. Bay to Texas and the West Indies; that have an elongate-conic-ovate, microscopically spirally striate shell, and that live in or on the mud or on plants on mud flats, in shallow water a little below low tide line (0-2 fms.). These shells are proportionately shorter than those of *Syrnola*, which possess a much larger number of more completely flat-sided whorls, and whose habitat is in much deeper waters (16 to 440 fms. recorded).

The animal of *Sayella* is proportionately large, the extended foot in the Chesapeake Bay form being longer than the shell. The foot is abruptly truncate before, rounded behind, and about two-thirds as wide as the greater diameter of the shell. The snout is similarly abruptly truncate, about twice as long as its width, which is about one-third that of the extended foot. The flattened triangular tentacles, directed laterally and upward from the head, are a little longer than wide, but are not quite equal in length to the width of the snout. The head behind the tentacles is cylin-

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² Dall, Proc. U. S. N. M., 1885, p. 286.

³ Johnson, Atlantic Coast List, Proc. Bost. Soc. Nat. Hist., 40, p. 159, 1934.

⁴ Bartsch, Proc. Bost. Soc. Nat. Hist., 34, p. 72, 1909.

dricial, equal in diameter to the snout. The eye spots are imbedded in the head a little behind the base of the tentacles. As in other Pyramidellidae there is no radula, but only a tubular proboscis, capable of eversion to twice the length of the snout. In color, the animal varies from whitish to a pale leaden gray, the greatest amount of pigment being developed on the snout.

The genus *Sayella* includes the following forms:

S. fusca (C. B. Adams) 1839.⁵ P. E. I. to Long Id. Sd. (Fla.?).

S. producta (C. B. Adams) 1840. Mass. to N. J.

S. winkleyi (Bartsch) 1909. Mass. to Conn.

S. crosscana Dall 1885.³ Fla. (W. Indies?).

S. hemphilli (Dall) 1883. Fla. (Genotype).

S. livida Rehder 1934. Texas.

SAYELLA CHESAPEAKEA, new species.

Shell: small, elongate-conic-ovate, with five whorls closely appressed to a shallow suture; whorls widest below the middle, microscopically spirally striate throughout; aperture acutely angled above, widely rounded below to the abruptly truncate columella, at the beginning of the single spiral columellar lamella. The parietal callus extends almost beyond the spiral lamella, leaving only a very minute umbilical pore. The apex is eroded in all specimens seen.

Operculum: thin, corneous, paucispiral.

Animal: see generic description.

The type (U.S.N.M. No. 530766) was collected on a mud flat on the east side of Broome's Island, Maryland, in the lower Patuxent River, has five whorls remaining and measures: Height, 3.85 mm.; diameter, 1.4 mm.; aperture height, 1.25 mm.; aperture diameter, 0.9 mm.

This form is roughly intermediate in size between *fusca* (C. B. Ads.) and *hemphilli* (Dall). It is regularly one-third smaller than *fusca* of the same number of whorls; the upper edge of the whorl is more closely appressed to the preceding whorl, with a distinct but much shallower suture between the flatter-sided whorls.

Every specimen seen was more or less eroded at the tip, from the action of the decay acids of the mud bottom in or on which

⁵ Johnson, Atlantic Coast List, p. 86.

they live. They were recovered in numbers (hundreds) by screening the mud from the bottom in about two feet of water at low tide, or by scraping the hand screen through the isolated clumps of Eelgrass. They have been seen also from the lower Potomac River at Colonial Beach, Virginia, and Cobb Island, Maryland, and from the Little Choptank River, near Cambridge, Maryland (Jackson). In both the Patuxent and the Little Choptank Rivers, they were taken in company with *Paludestrina (Ecrobia) truncata* Vanatta.

SAYELLA WATLINGSI, new species.

Shell: small, elongate-ovate, pellucid; whorls six, regularly arched from suture to suture, slowly increasing, obsoletely microscopically spirally striate; apex obtuse, nucleus (1 whorl) diagonally upturned. The aperture is a little oblique, obtusely angled above, effuse below, meeting the columellar lamella in a broadly rounded curve. The parietal callus barely reaches the lamella, leaving a minute but distinct spiral, tubular umbilicus.

Animal: not observed.

The type (U.S.N.M. No. 127488) was received from the U. S. Fish Commission, collected from the lagoon at Watling's Island (San Salvador) in the Bahamas, and measures: Height, 3.35 mm.; diameter, 1.2 mm.; aperture height, 1.1 mm.; aperture diameter, 0.7 mm. This species does not exhibit the extreme flattening of whorls seen in *crosscana* Dall; hence is of greater diameter, although nearly equal in height. Its shell appears thinner and more pellucid.

AN UNUSUAL CAVE DEPOSIT

BY J. P. E. MORRISON¹

Skyline Caverns, one mile south of Front Royal, Warren County, Virginia, were visited through the courtesy of Skyline Caverns, Inc., extended by Mr. Theodor Mussaens, on the third of July, 1938. The writer went to investigate the possibilities of a cave race of *Polygyra tridentata* (Say). One peculiar specimen of this land snail was collected from the cave, near its mouth,

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